

$$10) \quad \begin{array}{r} 5 = 3 + 4a^{-\frac{1}{6}} \\ -3 \quad -3 \\ \hline \end{array}$$

$$\frac{2}{4} = \frac{4a^{-\frac{1}{6}}}{4}$$

$$\frac{1}{2} = a^{-\frac{1}{6}}$$

$$2^6 = a$$

$$\boxed{64 = a}$$

$$11) \quad 4b^{-\frac{3}{4}} + 10 = \frac{21}{2}$$

$$\quad \quad \quad -10 = -10$$

$$\frac{21}{2} = 10.5$$

$$\frac{4b^{-\frac{3}{4}}}{4} = \frac{1}{2}$$

$$b^{-\frac{3}{4} \left(\frac{4}{3} \right)} = \frac{1}{8} \left(\frac{4}{3} \right)$$

$$b = \frac{1}{8} \left(\frac{4}{3} \right) = 8^{\frac{4}{3}} = \left(\sqrt[3]{8} \right)^4 = 2^4 = \boxed{16}$$

Calculator

$$12) \quad \cancel{-x^{\frac{3}{2}}} = \frac{-27}{-1}$$

$$x^{\frac{3}{2}} = 27^{\frac{2}{3}}$$

$$x = 27^{\frac{2}{3}} = \left(\sqrt[3]{27}\right)^2 = 3^2 = \boxed{9}$$

$$13) \begin{array}{r} -54 = 10 - (m-10)^{3/2} \\ -10 \quad -10 \end{array}$$

$$\begin{array}{r} -64 = - (m-10)^{3/2} \\ -1 \quad \quad -1 \end{array}$$

$$64^{(2/3)} = (m-10)^{3/2 (2/3)}$$

$$\begin{array}{r} 16 = m-10 \\ +10 \quad \quad +10 \\ \hline 26 = m \end{array}$$

$$14) \quad \begin{array}{r} -5126 \\ +6 \quad +6 \end{array} = -6 - 5(3x+22)^{\frac{5}{3}}$$

$$\begin{array}{r} -5120 \\ -5 \end{array} = \begin{array}{r} -5(3x+22)^{\frac{5}{3}} \\ -5 \end{array}$$

$$1024^{\frac{3}{5}} = (3x+22)^{\frac{5}{3}(\frac{3}{5})}$$

$$\begin{array}{r} 64 = 3x+22 \\ -22 \quad -22 \end{array}$$

$$\begin{array}{r} 42 = 3x \\ \underline{3} \quad \underline{3} \end{array}$$

$$(14 = x)$$

$$16) \quad 3646 = 1 + 5(4r+17)^{\frac{3}{2}}$$

$$\begin{array}{r} -1 \quad -1 \\ \hline \end{array}$$

$$\frac{3645}{5} = \frac{5(4r+17)^{\frac{3}{2}}}{5}$$

$$729 = (4r+17)^{\frac{3}{2}}$$

$$\begin{array}{r} 81 = 4r+17 \\ -17 \\ \hline \end{array}$$

$$\begin{array}{r} 64 = 4r \\ \hline 4 \quad 4 \end{array}$$

$$r = 16$$

$$17) \quad \begin{array}{r} -646 = -3(65-n)^{3/2} + 2 \\ \underline{-2} \quad \quad \quad \underline{-2} \end{array}$$

$$\begin{array}{r} -648 = \cancel{-3}(65-n)^{3/2} \\ \underline{-3} \quad \quad \quad \underline{\cancel{-3}} \end{array}$$

$$216^{\frac{2}{3}} = (65-n)^{\frac{3}{2} \left(\frac{2}{3} \right)}$$

$$\begin{array}{r} 36 = 65 - n \\ \underline{-65 \quad -65} \end{array}$$

$$\begin{array}{r} -29 = -n \\ \underline{-1} \quad \quad \underline{-1} \end{array}$$

$$\textcircled{29 = n}$$

$$18) \quad -3 + (8-2x)^{\frac{5}{4}} = 29$$

+3 +3

$$(8-2x)^{\frac{5}{4} \left(\frac{4}{5} \right)} = 32^{\frac{4}{5}}$$

$$\begin{array}{r} 8-2x = 16 \\ -8 \quad -8 \end{array}$$

$$\begin{array}{r} -2x = 8 \\ \underline{-2} \quad \underline{-2} \end{array}$$

$$x = -4$$